Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
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Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service	)	**MM Docket No. 87-268**

REPLY COMMENTS OF CITIZENS FOR A SOUND ECONOMY FOUNDATION

Founded in 1984, Citizens for a Sound Economy Foundation (CSE Foundation), is a 250,000-member non-profit organization that conducts research and educates the public on pro-consumer, market-based solutions to public policy problems. We have been active in a broad range of telecommunications policy concerns since 1988, addressing such issues as universal service, price regulation and use of the electromagnetic spectrum.

CSE Foundation files these reply comments in opposition to the imposition of mandatory standards for the broadcast of digital television signals. We believe that such a standard could severely limit innovation and technological advances in the television industry. In a quickly-changing field such as this, it would be counterproductive for the government to require adherence to any set of mandatory standards aside from those necessary to avoid electromagnetic interference. Instead, the Commission should primarily rely upon voluntary standards to assure compatibility and interoperability in this field.

The initial comments filed in response to the Fifth Further NPRM in this proceeding present the Commission with a choice between two very different models of development for the digital television industry. The first is the model used by the Commission when television was first authorized in the 1940's. Under this model, the technical parameters of the industry are tightly controlled by rules set by the Commission. Changes in the technology of the industry are achieved largely by a process of consensus-building, with final approval by the Commission.

The second model of development is that illustrated by the computer industry over the past two decades. As in broadcasting, standards and compatibility are important in computing. But change takes place rapidly and repeatedly. This change is often spurred not by consensus of the players, but by those who break away from the consensus to try out new ideas.[1]

Standards in a market such as this evolve with few government mandates, often through voluntary standard-setting among the firms involved, and sometimes through tests in the marketplace. In such a field it is simply impossible for any single authority to oversee the extent of this change, and detrimental to try to control its course in any detailed manner.

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[1]For further background on the dynamic growth in fields such as this, see Peter Pitsch, The Innovation Age: A New Perspective on the Telecom Revolution (Hudson Institute and Progress and Freedom Foundation, 1996). See also Bill Gates, The Road Ahead (Viking Press, 1995).

The first model of development may have been adequate for broadcasting in the years when broadcast -- and other communication -- technology was relatively stable, and the Commission and industry were able to work through each potential change as it was proposed.

But, as it moves into the digital world, television broadcasting increasingly fits the second model. Digital systems will make more and more variations of service possible, and the technology itself is improving geometrically nearly each year. As a number of commenters pointed out, television broadcasting may actually converge in the near future with the computer industry. But even if does not, it is becoming clear that it will be an industry more akin to computers than it will be to the broadcast industry of the 1940's.

How rapid and extensive could changes in television be? In the computer field, rapid change has been often described as following Moore's Law: computers double in speed and memory every 18 months. As pointed out by the Computer Industry Coalition on Advanced Television Service (CICATS), that means that during the eight years that ACATS has been working on these standards, computers have increased in speed and memory by some 50 to 100 times. Over the next 15 years (the proposed NTSC phase-out period), Moore's Law says that computers will improve by a factor

of 1,000.[2]

With digital technology, the television industry could experience change of a similar magnitude. Given that possibility, it would simply not make sense to treat broadcasting under the same type of regulation which had been applied to it in the past.

Early in this decade, the U.S. had a foretaste of what could happen were such standards imposed. As many commenters pointed out, it was only a few years ago that we were on the verge of adopting an analog standard for the next generation of television. Only by luck did we avoid locking in an outdated standard, which may have hindered the development of this industry by decades. Today, facing an even greater rate of change, it simply would not make sense to lock in a standard.

In addition to the prospect of future technological change, significant questions have been raised as to whether the proposed standard is the best available for consumers today. Other television industries, such as cable and satellite TV, have developed their own digital television systems, based on differing technologies.[3] CICATS suggests an alternative type of

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[2]See, Comments of the Computer Industry Coalition on Advanced Television Service, Exhibit B, at 13.

[3]See, Comments of Tele-Communications, Inc., at 17.

standard, which it argues will cost consumers $44 billion less than the ACATS proposal.[4] CSE Foundation expresses no opinion as to the technical merit of any alternative system. However, we do believe that consumers should not be automatically foreclosed from enjoying the potential benefits of these proposed alternative systems.

Despite problems with a mandatory standard, many commenters presented reasons why such a standard should still be imposed. On close review, however, these arguments do not hold up. Among the arguments:

1. **The standard is supported by almost all the affected industries.**[5] Unlike horseshoes and nuclear bombs, "almost" doesn't count in this area. In dynamic industries, progress seems to come more often from a single firm or individual with an idea that runs counter to the existing consensus. A mandate based on a current industry consensus would cut off the ability of just such players to show the value of their ideas.

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[4] Comments of CICATS, Exhibit C.

[5] See, i.e., Comments of the Digital HDTV Grand Alliance, at 5-6. ("Almost without exception the participants in [the affected] industries are urging the Commission to reinforce that consensus to allow all segments of the industry to move forward rapidly and confidently to implement the service.")

2. The failure of AM stereo shows that voluntary standards don't work.[6] The failure of AM stereo was more likely caused by a lack of interest by the public, rather than a lack of mandates. But whatever the case, it is interesting that opponents of voluntary standards cite only this one example, while usually ignoring the overwhelming number of cases in which voluntary action has worked. This includes direct broadcast satellites, cellular telephony, and personal communications services, to name only a few. Going outside communications to broader areas of consumer electronics, mandated standards are quite rare, with products and services from VCRs to music CDs to computer hardware and software doing very well without mandates.

The Electronics Industry Association was perhaps the only commenter to cite a case where the use of mandatory standards has apparently been successful, phone plug jacks. Comments of EIA at fn. 11. In this case, however, the Commission was dealing with a monopoly provider of services with the ability to impede competition from alternative standards. No such market power has been alleged in this case.

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[6] See, i.e., Comments of Philips Electronic North America Corporation at iv, Comments of Digital HDTV Grand Alliance at 12-13.

3. Broadcast television is different from these other technologies because of its importance to society.[7] To justify mandates, broadcast television must be distinguished from the vast number of other services which prosper under a voluntary system. Yet, importance to society is not itself a justification for mandates. There must also be a showing that the mandate will somehow increase or preserve broadcasting's ability to help society. But, by constraining innovation, mandates will likely reduce broadcasting's potential benefits to society. Given this, to the extent that broadcast television in fact does make a unique contribution to society, then it is even more important that we not hinder innovation technological development in the field.

4. If anyone had criticisms of the standard, they should have raised them long ago. This argument is misplaced for two reasons. First, the rules being adopted by the Commission should be the best possible for consumers, regardless of which industry missed what chance to make an argument. Second, digital technology was in its infancy when this process began. The fact that some possibilities did not become available until late in the process is an illustration of the problems of freezing in any standard. To argue that new developments should be ignored would be equivalent to saying that Windows operating systems should be barred because they were not proposed when the PC was developed.

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[7] Comments of Digital HDTV Grand Alliance, at 6.

5. The Grand Alliance system is flexible enough to accommodate any future changes in technology.[8] While we have no specific comment on the technical characteristics of the ACATS system, it does appear to incorporate a significant amount of flexibility. But, while the system is to be applauded for such things as its 18 allowed video formats, that does not remove the very serious concern that innovation may still be hindered. In a world where digital technology may increase by a factor of 1,000 over the phase-in period, it is senseless to argue that all contingencies have been provided for. That is the nature of innovation, by definition it is unexpected.[9]

Conclusion

The advent of digital television has the potential to provide U.S. consumers with unprecedented improvements in the type and quality of broadcasting services they receive. But to achieve the full potential of digital TV, the Commission must treat this new industry like other successful, innovative

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[8]One commenter went so far as to say that it provides "virtually unlimited flexibility." Comments of Philips Electronics North America Corporation at 14.

[9]Moreover, even if all possibilities were somehow accommodated, it should be remembered that is not the same as maximizing their value to consumers. No standard can maximize all things to all people. Some trade-offs must be made: our point is that those decisions should be made by consumers, not by the Commission.

industries in the fast-changing digital world. It must refrain from making the Grand Alliance standard, or any other standard, mandatory.[10] As has been shown in virtually every other industry, the use of voluntary standards can effectively serve the crucial job of ensuring that systems are compatible. In this way, digital television could be delivered while maximizing innovation and choice, to the benefit of U.S. consumers and viewers.

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[10]At the very least, mandates should be limited to the minimum believed necessary to prevent interference.